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# The Mineral Industry of Hungary

UNITED STATES DEPARTMENT OF THE INTERIOR

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# The Mineral Industry of Hungary

By Walter G. Steblez[1]

The output of Hungary's mineral industry in 1987 showed modest gains compared with that of 1986. The production of most nonfuel minerals increased, while that of natural gas and petroleum declined slightly. The country possessed few raw material resources apart from bauxite, lignite, some manganese, natural gas, and petroleum. One-half of Hungary's demand for raw materials was met by imports, mainly in the form of petroleum and natural gas from the Soviet Union. The country's output of fuels and raw materials constituted only 1% of its gross national product (GNP), while net consumption was about 7% of GNP. In 1987, Hungary's centrally planned economy registered overall gains. National income rose by 2.5% compared with that of 1986; industrial production increased by 3.7%. Although no new major projects were started during the year, substantial investment was made in mineral exploration, and new geological maps were prepared indicating newfound mineral deposits. About 1% of the country's national income was allocated for the exploration of mineral resources.

**Government Policies and Programs.**—Continuing economic reforms were the mainstay of the Government's economic policy. The chief aspects of Hungary's economic reforms were industrial decentralization, encouragement of private initiative and the market orientation of the country's industrial production. Emphasis was placed on the introduction and assimilation of high technology in the electronic, computer, processing, and fabricating sectors through the year 2000. The short-term economic plan for 1988 called for a reduction in Government subsidies to state-owned enterprises. The restructuring of uneconomic mining and metallurgical enterprises was expected to result in the early retirement of several hundred employees. The economic plan for 1988 called for the output of coal, natural gas, and petroleum to be at about 1987 levels. It also called for a decrease in hydrocarbon-based electric power generation and an increase in the production of nuclear-generated electric power. The planned output of pig iron and crude and rolled steel would be less than in 1987, but the production of specialty steels and higher value metal products would be greater. The 1988 plan also set growth in the chemical sector to exceed the national industrial average. As in 1987, large-scale state investment in the mineral industry was not planned for 1988.

## PRODUCTION

In 1987, metallic ore production in Hungary was limited to bauxite and manganese. Copper, iron, lead, and zinc mining was discontinued owing to difficult geological conditions and depletion of economic resources. However, because of its scale and potential wealth, the deep-lying Recsk copper deposit may be mined in the near-term under more favorable financial conditions. The country's industrial mineral sector continued to meet Hungary's domestic and export requirements. The chemical industry showed the most activity in 1987 by increasing its production by 7% compared with that of 1986.

## Table 1.—Hungary: Production of mineral commodities[1]

(Metric tons unless otherwise specified)

| Commodity[2] | 1983 | 1984 | 1985 | 1986[p] | 1987[e] |
|---|---|---|---|---|---|
| **METALS** | | | | | |
| Aluminum: | | | | | |
| Bauxite, gross weight thousand tons | 2,917 | 2,994 | 2,816 | 3,022 | [3]3,101 |
| Alumina, gross weight do. | 836 | 811 | 798 | 856 | [3]858 |
| Metal, primary | 74,039 | 74,202 | 73,859 | 73,877 | [3]75,500 |
| Copper, metal:[e] | | | | | |
| Smelter, secondary | 100 | 100 | 100 | 100 | 100 |
| Refined (including secondary) | 12,500 | 12,800 | 12,800 | 12,800 | 12,500 |
| Gallium, metal[e] | 2,100 | 2,400 | 2,800 | [r]3,200 | 3,200 |
| Gold, mine output, Au content[e] thousand troy ounces | 30 | 20 | 20 | 20 | 18 |
| Iron and steel: | | | | | |
| Iron ore: | | | | | |
| Gross weight thousand tons | 441 | 383 | 311 | -- | -- |
| Iron content do. | 106 | 92 | 75 | -- | -- |
| Metal: | | | | | |
| Pig iron: | | | | | |
| For steel industry do. | 1,966 | 2,029 | 2,007 | 1,987 | [3]2,033 |
| For foundry use do. | 81 | 69 | 88 | 67 | [3]66 |
| Total do. | 2,047 | 2,097 | 2,095 | 2,054 | [3]2,100 |
| Ferroalloys:[e] | | | | | |
| Ferrosilicon | 10,000 | 9,000 | 9,000 | 9,000 | 10,000 |
| Silicon metal | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| Other | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| Total | 14,000 | 13,000 | 13,000 | 13,000 | 14,000 |
| Steel, crude thousand tons | 3,616 | 3,750 | 3,647 | 3,715 | [3]3,622 |
| Semimanufactures, rolled only do. | 2,815 | 2,953 | 2,868 | 2,896 | [3]2,825 |
| Lead:[e] | | | | | |
| Mine output, Pb content | 700 | 700 | 700 | -- | [3] -- |
| Metal, refined, secondary | 100 | 100 | 100 | 100 | 100 |
| Manganese ore: | | | | | |
| Run of mine: | | | | | |
| Gross weight | 103,580 | 115,885 | 115,334 | 106,009 | [3]125,834 |
| Mn content | 20,000 | 22,000 | 22,000 | 20,000 | [3]24,000 |
| Concentrate: | | | | | |
| Gross weight | 59,000 | 67,000 | 65,700 | 63,000 | 74,000 |
| Mn content | 17,700 | 20,100 | 19,700 | 18,900 | 22,000 |
| Vanadium, metal[e] | 250 | 275 | 300 | 300 | 300 |
| Zinc:[e] | | | | | |
| Mine output, Zn content | 2,400 | 2,300 | 2,300 | -- | [3] -- |
| Metal, smelter, secondary | 600 | 600 | 600 | 600 | 600 |
| **INDUSTRIAL MINERALS** | | | | | |
| Cement, hydraulic thousand tons | 4,243 | 4,145 | 3,678 | 3,846 | [3]4,153 |
| Clays: | | | | | |
| Bentonite: | | | | | |
| Raw | 79,807 | 64,158 | 59,853 | 79,888 | [3]98,231 |
| Processed | 56,850 | 45,759 | 44,431 | 47,504 | [3]52,828 |
| Kaolin: | | | | | |
| Raw | 37,375 | 38,869 | 29,038 | 29,837 | [3]33,289 |
| Processed | 7,874 | 8,302 | 6,485 | 6,032 | [3]5,179 |
| Lime, calcined thousand tons | 822 | 823 | [r]801 | 831 | [3]836 |
| Nitrogen: N content of ammonia do. | 813 | 814 | 791 | 811 | 810 |
| Perlite | 93,503 | 94,360 | 94,466 | 109,360 | [3]112,410 |
| Pyrites, gross weight[e] | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 |
| Refractory materials, n.e.s.: | | | | | |
| Chamotte products thousand tons | 166 | 164 | 153 | 132 | 135 |
| Chrome magnesite products do. | 48 | 38 | 39 | 42 | 45 |
| Sand and gravel: | | | | | |
| Gravel thousand cubic meters | 10,665 | 10,317 | 8,529 | 8,179 | 8,200 |
| Sand: | | | | | |
| Common[e] do. | 400 | 400 | 400 | 400 | 400 |
| Foundry thousand tons | 579 | 591 | 560 | 519 | [3]631 |
| Sodium compounds: | | | | | |
| Hydroxide (caustic soda) | 191,646 | 193,688 | 193,719 | 201,884 | [3]197,376 |
| Sulfate[e] | 11,000 | 10,000 | 10,000 | 10,000 | 9,000 |
| Stone: | | | | | |
| Dimension, all types thousand tons | 7,060 | 5,874 | 5,718 | 5,966 | 6,000 |
| Dolomite do. | 1,167 | 1,286 | 1,158 | 1,146 | 1,150 |
| Limestone do. | 8,981 | 7,695 | 7,418 | 7,469 | 7,500 |
| Quartzite do. | 14 | 22 | 37 | 33 | 35 |

See footnotes at end of table.

**Table 1.—Hungary: Production of mineral commodities[1] —Continued**

(Metric tons unless otherwise specified)

| Commodity[2] | 1983 | 1984 | 1985 | 1986[p] | 1987[e] |
|---|---|---|---|---|---|
| INDUSTRIAL MINERALS —Continued | | | | | |
| Sulfur: | | | | | |
| From pyrite[e] | 3,000 | 2,000 | 2,000 | 1,000 | 1,000 |
| Byproduct, elemental, all sources[e] | 9,200 | 9,000 | 9,000 | 10,000 | 10,000 |
| Total[e] | 12,200 | 11,000 | 11,000 | 11,000 | 11,000 |
| Sulfuric acid | 605,659 | 549,159 | 520,338 | 539,775 | [3]573,323 |
| Talc[e] | 17,000 | 17,500 | 17,000 | 16,000 | 15,000 |
| MINERAL FUELS AND RELATED MATERIALS | | | | | |
| Carbon black[e] | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 |
| Coal: | | | | | |
| Bituminous thousand tons | 2,827 | 2,573 | 2,639 | 2,325 | [3]2,360 |
| Brown do. | 14,406 | 14,448 | 14,016 | 13,821 | [3]13,261 |
| Lignite do. | 7,980 | 8,026 | 7,387 | 6,983 | [3]7,223 |
| Total do. | 25,213 | 25,047 | 24,042 | 23,128 | [3]22,844 |
| Coke: | | | | | |
| Coke oven: | | | | | |
| Metallurgical do. | 564 | 546 | 492 | 547 | [3]629 |
| Other[e] do. | 170 | 160 | 160 | 150 | 150 |
| Total do. | 734 | 706 | 652 | 697 | 819 |
| Gashouse[e] do. | 170 | 160 | 160 | 160 | 160 |
| Total coke do. | 904 | 866 | 812 | 857 | 979 |
| Fuel briquets do. | 1,533 | 1,549 | 1,722 | 2,006 | [3]2,134 |
| Gas: | | | | | |
| Manufactured million cubic feet | 15,362 | 14,232 | 11,830 | 8,122 | 9,000 |
| Natural, marketed do. | 229,899 | 244,060 | 263,806 | 250,663 | [3]247,980 |
| Natural gas liquids:[e] | | | | | |
| Natural gasoline thousand 42-gallon barrels | 3,800 | 3,900 | 3,800 | 3,700 | 3,700 |
| Liquefied petroleum gas do. | 3,500 | 3,500 | 3,500 | 3,400 | 3,400 |
| Peat, agricultural use[e] thousand tons | 70 | 70 | 70 | 75 | 70 |
| Petroleum: | | | | | |
| Crude: | | | | | |
| As reported do. | 2,004 | 2,007 | 2,012 | 2,005 | [3]1,914 |
| Converted thousand 42-gallon barrels | 13,587 | 13,607 | 13,641 | 13,594 | [3]12,977 |
| Refinery products:[4] | | | | | |
| Gasoline including naphtha do. | 20,153 | 21,479 | 22,644 | 24,310 | [3]25,321 |
| Kerosene and other light distillates[e] [5] do. | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 |
| Distillate fuel oil do. | 23,454 | 25,909 | 24,506 | 26,088 | [3]26,147 |
| Residual fuel oil do. | 16,836 | 16,960 | 16,970 | 15,664 | [3]17,296 |
| Lubricants[e] do. | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Liquefied petroleum gas[e] do. | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Asphalt and bitumen[e] do. | 3,800 | 3,800 | 3,800 | 3,600 | 3,700 |
| Paraffin and petrolatum[e] do. | 250 | 250 | 250 | 250 | 250 |
| Total do. | 73,493 | 77,398 | 77,170 | 78,912 | 81,714 |

[e]Estimated. [p]Preliminary. [r]Revised.

[1]Table includes data available through June 6, 1988.

[2]In addition to the commodities listed, diatomite, gypsum, and a variety of other crude construction materials such as common clays are produced, but available information is inadequate to make reliable estimates of output levels.

[3]Reported figure.

[4]Excludes refinery fuel and losses.

[5]Data derived by subtracting reported motor gasoline and white spirit data from reported light refinery products total.

## TRADE

In 1987, the value of Hungary's exports rose by 7%, and the value of imports by 5% compared with respective 1986 levels. About 63% of the country's expenditures on imports were for energy, raw materials, and heavy industrial durables. Compared with those of 1986, Hungary's imports of energy products rose by 2%, most of which came from the Soviet Union. Approximately 35% of Hungary's net income from exports was from sales of industrial products and fuels, with exports of metals and chemicals showing the most marked increases in 1987. The U.S.S.R. remained Hungary's major supplier of metals and fuels.

## Table 2.—Hungary: Apparent exports of mineral commodities[1]

(Metric tons unless otherwise specified)

| Commodity | 1985 | 1986[p] | Destinations, 1986 | |
|---|---|---|---|---|
| | | | United States | Other (principal) |
| **METALS** | | | | |
| Aluminum: | | | | |
| Ore and concentrate[2] | 382,335 | 461,473 | -- | Czechoslovakia 285,296; East Germany 140,640; Rumania 34,871. |
| Oxides and hydroxides[2] | 599,852 | 669,045 | 18 | U.S.S.R. 511,116; Poland 76,354; East Germany 23,928. |
| Ash and residue containing aluminum | 1,373 | 1,877 | -- | Belgium-Luxembourg 551; Italy 519; West Germany 507. |
| Metal including alloys:[2] | | | | |
| Scrap | 6,928 | 7,002 | -- | Austria 3,917; Italy 1,714; West Germany 1,083. |
| Unwrought | 50,528 | 61,200 | 25 | Poland 10,350; Bulgaria 4,456; unspecified 25,977. |
| Semimanufactures | 52,926 | 60,329 | 5,325 | East Germany 5,396; West Germany 5,521; Sweden 6,504. |
| Antimony: Metal including alloys, all forms | 40 | -- | | |
| Cadmium: Metal including alloys, all forms | -- | 29 | -- | All to Czechoslovakia. |
| Chromium: Oxides and hydroxides | 131 | 28 | -- | Italy 25; New Zealand 3. |
| Cobalt: Metal including alloys, all forms | 7 | -- | | |
| Columbium and tantalum: Metal including alloys, all forms, tantalum | 1 | -- | | |
| Copper: | | | | |
| Ore and concentrate | 192 | -- | | |
| Oxides and hydroxides | 665 | 5 | -- | All to Italy. |
| Sulfate | | 1,313 | -- | France 595; West Germany 312; United Kingdom 254. |
| Ash and residue containing copper | 168 | 238 | -- | Netherlands 132; Belgium-Luxembourg 101. |
| Metal including alloys: | | | | |
| Scrap | 4,769 | 1,093 | -- | West Germany 625; Belgium-Luxembourg 250; Netherlands 108. |
| Unwrought | 5,246 | 1,584 | -- | Yugoslavia 1,000; Austria 391; Belgium-Luxembourg 132. |
| Semimanufactures | 6,081 | 5,395 | 865 | West Germany 2,050; Austria 1,978. |
| Gold: | | | | |
| Waste and sweepings, value, thousands | -- | $29 | -- | All to West Germany. |
| Metal including alloys, unwrought and partly wrought, do. | -- | $22 | -- | West Germany $20; Switzerland $2. |
| Iron and steel: Metal: | | | | |
| Scrap | 40,223 | 16,346 | -- | West Germany 4,191; Italy 3,873; Austria 3,791. |
| Pig iron, cast iron, related materials | 1 | 57 | -- | West Germany 37; Belgium-Luxembourg 20. |
| Ferroalloys: | | | | |
| Ferrosilicon | -- | 21 | -- | All to Italy. |
| Unspecified | -- | 10 | -- | All to Sweden. |
| Steel, primary forms[2] | 97,719 | 62,824 | 5,566 | Austria 15,974; West Germany 9,947; Egypt 7,801. |
| Semimanufactures: | | | | |
| Bars, rods, angles, shapes, sections[2] | 721,646 | 696,235 | -- | U.S.S.R. 196,000; Bulgaria 67,848; Italy 35,701. |
| Universals, plates, sheets[2] | 320,529 | 327,720 | 20,990 | Japan 47,231; Italy 46,228. |
| Hoop and strip[2] | 17,184 | 20,127 | 15 | Yugoslavia 6,492; Syria 3,549; Czechoslovakia 1,561. |
| Rails and accessories | 27 | 84 | -- | All to West Germany. |
| Wire[2] | 19,516 | 20,995 | 20 | Lebanon 4,906; Yugoslavia 4,121; U.S.S.R. 4,066. |
| Tubes, pipes, fittings[2] | 81,102 | 72,630 | 159 | China 15,347; U.S.S.R. 12,339; Austria 11,276. |
| Castings and forgings, rough[2] | 15,385 | 12,919 | 283 | Poland 3,450; West Germany 2,259; Sweden 1,863. |

See footnotes at end of table.

Table 2.—Hungary: Apparent exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

| Commodity | 1985 | 1986[p] | Destinations, 1986 | |
|---|---|---|---|---|
| | | | United States | Other (principal) |
| METALS —Continued | | | | |
| Lead: | | | | |
| Ash and residue containing lead | 1,121 | 838 | -- | All to West Germany. |
| Metal including alloys: | | | | |
| Scrap | 2,168 | 951 | -- | West Germany 934; Netherlands 17. |
| Unwrought | -- | 19 | -- | All to United Kingdom. |
| Semimanufactures | 4 | -- | | |
| Lithium: Metal including alloys, all forms | 4 | 2 | -- | All to West Germany. |
| Manganese: Ore and concentrate, metallurgical-grade | [3]11,417 | [3]9,100 | NA | NA. |
| Molybdenum: Metal including alloys, all forms | 3 | 5 | -- | Yugoslavia 4; West Germany 1. |
| Nickel: | | | | |
| Matte and speiss | 35 | -- | | |
| Ash and residue containing nickel | -- | 25 | -- | West Germany 14; Netherlands 11. |
| Metal including alloys: | | | | |
| Scrap | 377 | 110 | -- | West Germany 78; Netherlands 22. |
| Unwrought | 22 | 222 | -- | Austria 206; Sweden 8; Netherlands 6. |
| Semimanufactures | 161 | 239 | 2 | West Germany 136; Yugoslavia 42; France 40. |
| Platinum-group metals: | | | | |
| Waste and sweepings: | | | | |
| value, thousands | $3,432 | $4,078 | -- | All to West Germany. |
| Metals including alloys, unwrought and partly wrought: do. | $38 | $3 | -- | All to Switzerland. |
| Silver: | | | | |
| Waste and sweepings: do. | $206 | [4]$19 | -- | Switzerland $16; United Kingdom $3. |
| Metal including alloys, unwrought and partly wrought: do. | $518 | $889 | -- | West Germany $670; Austria $176; United Kingdom $29. |
| Tin: | | | | |
| Ash and residue containing tin | 20 | 39 | -- | All to West Germany. |
| Metal including alloys: | | | | |
| Scrap | 16 | 33 | -- | All to Switzerland. |
| Unwrought | 20 | -- | | |
| Semimanufactures | 1 | -- | | |
| Titanium: Metal including alloys, all forms | -- | 1 | -- | All to Ireland. |
| Tungsten: | | | | |
| Ore and concentrate | 44 | 27 | -- | West Germany 22; Netherlands 5. |
| Metal including alloys, all forms | 22 | 39 | -- | West Germany 34; United Kingdom 3; Yugoslavia 2. |
| Zinc: | | | | |
| Matte | 416 | 414 | -- | West Germany 267; Italy 174. |
| Ash and residue containing zinc | 4,166 | 1,657 | -- | West Germany 1,611; Belgium-Luxembourg 46. |
| Metal including alloys: | | | | |
| Scrap | 636 | 401 | -- | West Germany 276; Belgium-Luxembourg 54; Italy 49. |
| Unwrought | 20 | -- | | |
| Semimanufactures | -- | 1 | -- | All to West Germany. |
| Other: | | | | |
| Ores and concentrates | -- | 49 | -- | All to Austria. |
| Ashes and residues | 30,051 | 3,183 | -- | Italy 2,706; West Germany 300; Sweden 158. |
| Base metals including alloys, all forms | 34 | 21 | -- | Sweden 17; Austria 1; France 1. |
| INDUSTRIAL MINERALS | | | | |
| Abrasives, n.e.s.: | | | | |
| Natural: Corundum, emery, pumice, etc | 500 | 244 | 217 | Norway 20; West Germany 7. |
| Artificial: | | | | |
| Corundum[5] | 18,750 | 20,472 | 236 | Romania 4,612; Japan 3,225; Austria 2,466. |
| Silicon carbide | -- | 2 | -- | All to West Germany. |
| Dust and powder of precious and semiprecious stones including diamond: value, thousands | -- | $45 | $15 | Greece $22; Italy $4. |
| Grinding and polishing wheels and stones[6]: do. | $1,368 | $1,271 | $119 | East Germany $327; Poland $316; Romania $189. |
| Asbestos, crude | -- | 1,943 | -- | All to Belgium-Luxembourg. |
| Bromine | -- | 4 | -- | All to Italy. |
| Cement[5] | 49,219 | 55,770 | -- | U.S.S.R. 27,582; Yugoslavia 23,710; West Germany 3,354. |

See footnotes at end of table.

**Table 2.—Hungary: Apparent exports of mineral commodities[1] —Continued**

(Metric tons unless otherwise specified)

| Commodity | 1985 | 1986[p] | Destinations, 1986 | |
|---|---|---|---|---|
| | | | United States | Other (principal) |
| INDUSTRIAL MINERALS — Continued | | | | |
| Clays, crude: | | | | |
| Bentonite[3] | 10,338 | 11,423 | -- | East Germany 6,232; Poland 5,191. |
| Kaolin[3] | 8,098 | 7,443 | -- | Czechoslovakia 6,172; West Germany 1,271. |
| Unspecified | 704 | 1,390 | -- | Austria 975; West Germany 179; Yugoslavia 168. |
| Cryolite and chiolite | -- | 238 | 138 | Norway 100. |
| Diamond: | | | | |
| Gem, not set or strung value, thousands | $23 | $50 | -- | Italy $37; Austria $13. |
| Industrial stones do. | $239 | $629 | -- | Belgium-Luxembourg $509; Austria $120. |
| Diatomite and other infusorial earth | 2,829 | 3,066 | -- | Austria 2,938, Greece 108; France 20. |
| Feldspar, fluorspar, related materials | 977 | 766 | -- | All to Austria. |
| Fertilizer materials: | | | | |
| Crude, n.e.s | 441 | 120 | -- | Switzerland 92; Italy 22; West Germany 6. |
| Manufactured: | | | | |
| Ammonia[3] thousand tons | 44 | 60 | -- | Yugoslavia 49; Austria 4; Italy 3. |
| Nitrogenous do. | [r]1,592 | [r]1,418 | -- | Yugoslavia 100; West Germany 75; unspecified 1,165. |
| Unspecified and mixed do. | 187 | 144 | -- | West Germany 78; Austria 39; Finland 10. |
| Kyanite and related materials | 103 | 360 | -- | West Germany 287; United Kingdom 73. |
| Magnesium compounds | 90 | 36 | -- | Austria 24; Italy 12. |
| Mica: | | | | |
| Crude including splittings and waste | 8 | 138 | 138 | |
| Worked including agglomerated splittings | -- | 1 | -- | All to France. |
| Precious and semiprecious stones other than diamond: | | | | |
| Natural value, thousands | $4 | $83 | -- | Austria $58, France $15; Spain $9. |
| Synthetic do. | $45 | $23 | -- | All to United Kingdom. |
| Pyrite, unroasted | -- | 53 | -- | All to Austria. |
| Salt and brine | 21 | 42 | -- | All to United Kingdom. |
| Sodium compounds, n.e.s.: | | | | |
| Carbonate, manufactured | -- | 1 | -- | Do. |
| Sulfate, manufactured | 170 | -- | | |
| Stone, sand and gravel: | | | | |
| Dimension stone: | | | | |
| Crude and partly worked[3] | 14,181 | 12,101 | -- | U.S.S.R. 7,061; East Germany 2,756; Czechoslovakia 1,468. |
| Worked | 37 | 42 | -- | Austria 37; West Germany 5. |
| Dolomite, chiefly refractory-grade | 67 | 81 | -- | Finland 80; West Germany 1. |
| Gravel and crushed rock | 11,963 | 2,037 | -- | Yugoslavia 1,424; Austria 345; West Germany 268. |
| Quartz and quartzite | 16,815 | 10,774 | -- | All to Austria. |
| Sand other than metal-bearing[3] | 32,136 | 40,215 | -- | Yugoslavia 28,622; Austria 7,599; Czechoslovakia 3,935. |
| Sulfur: | | | | |
| Elemental: | | | | |
| Crude including native and byproduct | 16,768 | 18,031 | -- | Austria 18,020; Ireland 11. |
| Colloidal, precipitated, sublimed | -- | 59 | -- | All to Yugoslavia. |
| Sulfuric acid[3] | 62,365 | 38,948 | -- | Bulgaria 19,092; Yugoslavia 9,424; Austria 7,536. |
| Talc, steatite, soapstone, pyrophyllite | 15 | 1 | -- | All to West Germany. |
| Vermiculite, perlite, chlorite | 7,706 | 11,921 | -- | Do. |
| Other: | | | | |
| Crude[3] | 76,069 | 83,481 | -- | Austria 24,462; Poland 14,814; Yugoslavia 10,898. |
| Slag and dross, not metal-bearing | 1,271 | 727 | -- | All to Austria. |
| MINERAL FUELS AND RELATED MATERIALS | | | | |
| Asphalt and bitumen, natural | 6,747 | 276 | -- | Do. |
| Carbon black | 678 | 1,550 | -- | West Germany 1,216; Italy 288; Yugoslavia 34. |
| Coal: | | | | |
| Anthracite and bituminous thousand tons | [r]483 | 18 | -- | All to Yugoslavia. |
| Lignite including briquets do. | [r]294 | 1 | -- | Mainly to France. |
| Gas, natural: Gaseous million cubic feet | 735 | 695 | -- | All to U.S.S.R. |
| Peat including briquets and litter[3] | 6,299 | 4,470 | -- | Austria 2,185; Italy 1,212; Yugoslavia 1,050. |

See footnotes at end of table.

## Table 2.—Hungary: Apparent exports of mineral commodities[1] —Continued

(Metric tons unless otherwise specified)

| Commodity | 1985 | 1986[p] | Destinations, 1986 | |
|---|---|---|---|---|
| | | | United States | Other (principal) |
| MINERAL FUELS AND RELATED MATERIALS —Continued | | | | |
| Petroleum: | | | | |
| Crude thousand 42-gallon barrels | -- | 6 | -- | All to Yugoslavia. |
| Refinery products: | | | | |
| Liquefied petroleum gas[3] do. | 461 | 418 | -- | Italy 310; Austria 44; Netherlands 39. |
| Gasoline do. | 1,512 | 2,206 | -- | West Germany 912; Austria 592; Switzerland 431. |
| Mineral jelly and wax[3] do. | 315 | 348 | 8 | West Germany 72; Italy 60; Morocco 43. |
| Kerosene and jet fuel do. | 876 | 1,039 | -- | Austria 503; West Germany 353; Yugoslavia 142. |
| Distillate fuel oil do. | 3,253 | 5,400 | -- | Austria 1,858; Switzerland 1,724; West Germany 1,525. |
| Lubricants[3] do. | 485 | 417 | -- | Austria 214; Yugoslavia 75; U.S.S.R. 56. |
| Residual fuel oil do. | 14 | 9 | -- | All to Italy. |
| Bitumen and other residues[3] do. | 458 | 575 | -- | Austria 282; West Germany 242; Bulgaria 21. |
| Bituminous mixtures do. | 23 | 18 | -- | West Germany 17. |

[p]Preliminary. NA Not available.

[1]Table prepared by Josef Plachy. Owing to a lack of official trade data published by Hungary, this table should not be taken as a complete presentation of this country's mineral trade. Unless otherwise specified, these data were compiled from United Nations information and data published by the trading partner countries.

[2]Official Trade Statistics of Hungary.

[3]Statistical Yearbook of Member States of the Council for Mutual Economic Assistance, Moscow, U.S.S.R.

[4]May include other precious metals.

## Table 3.—Hungary: Apparent imports of mineral commodities[1]

(Metric tons unless otherwise specified)

| Commodity | 1985 | 1986[p] | Sources, 1986 | |
|---|---|---|---|---|
| | | | United States | Other (principal) |
| METALS | | | | |
| Alkali and alkaline-earth metals: | | | | |
| Alkali metals | -- | 3 | -- | All from Italy. |
| Aluminum: | | | | |
| Ore and concentrate | 1,125 | 1,588 | -- | West Germany 1,533; Austria 54; Switzerland 1. |
| Oxides and hydroxides | 130 | 84 | 8 | Netherlands 29; Italy 20; West Germany 11. |
| Metal including alloys: | | | | |
| Scrap | -- | 24 | -- | All from United Kingdom. |
| Unwrought[2] | 165,294 | 206,097 | -- | U.S.S.R. 196,773; Romania 6,233. |
| Semimanufactures[2] | 3,176 | 3,639 | 3 | East Germany 2,146; Czechoslovakia 433; Austria 307. |
| Antimony: Oxides | 48 | 10 | -- | All from France. |
| Bismuth: Metal including alloys, all forms | -- | 1 | -- | All from West Germany. |
| Chromium: | | | | |
| Ore and concentrate | 15,256 | 15,376 | -- | U.S.S.R. 15,000; Finland 230; West Germany 146. |
| Oxides and hydroxides | 388 | 176 | -- | United Kingdom 175; France 1. |
| Cobalt: | | | | |
| Oxides and hydroxides | -- | 30 | -- | All from Finland. |
| Metal including alloys, all forms | 21 | 1 | -- | All from West Germany. |
| Columbium and tantalum: Metal including alloys, all forms: | | | | |
| Columbium (niobium) | (5) | 1 | -- | Do. |
| Tantalum | -- | (5) | (5) | |

See footnotes at end of table.

**Table 3.—Hungary: Apparent imports of mineral commodities[1]—Continued**

(Metric tons unless otherwise specified)

| Commodity | 1985 | 1986[p] | Sources, 1986: United States | Sources, 1986: Other (principal) |
|---|---|---|---|---|
| METALS—Continued | | | | |
| Copper: | | | | |
| Oxides and hydroxides | -- | 5 | -- | All from West Germany. |
| Sulfate[3] | 3,550 | 3,520 | -- | U.S.S.R. 3,500; Greece 20. |
| Metal including alloys: | | | | |
| Scrap | 6,534 | 8,473 | -- | Chile 4,947; West Germany 1,597; Belgium-Luxembourg 1,169. |
| Unwrought[3] | 29,129 | 36,600 | -- | U.S.S.R. 15,412; Poland 6,943; Chile 5,495. |
| Semimanufactures | [3]11,477 | [3]15,706 | 7 | West Germany 1,350; Austria 307; unspecified 13,906. |
| Gold: Metal including alloys, unwrought and partly wrought: value, thousands | $561 | $620 | $3 | West Germany $553; Switzerland $48; United Kingdom $16. |
| Iron and steel: | | | | |
| Iron ore and concentrate: | | | | |
| Excluding roasted pyrite[3]: thousand tons | 2,382 | 3,414 | -- | U.S.S.R. 3,140; Brazil 67; India 54. |
| Pyrite, roasted: do | 44 | 17 | -- | All from Yugoslavia. |
| Metal: | | | | |
| Scrap | 14,000 | 8,000 | -- | Yugoslavia 3,000; unspecified 4,000. |
| Pig iron, cast iron, related materials[3] | 272,413 | 254,297 | 2 | U.S.S.R. 251,923; Austria 2,315; West Germany 36. |
| Ferroalloys: | | | | |
| Ferrochromium[3] | 10,390 | 11,183 | -- | U.S.S.R. 7,440; Yugoslavia 1,200; Sweden 754. |
| Ferromanganese[3] | 44,951 | 42,250 | -- | U.S.S.R. 23,284; Czechoslovakia 3,680. |
| Ferrosilicomanganese | -- | 30 | -- | All from West Germany. |
| Ferrosilicon[3] | 6,742 | 7,424 | -- | U.S.S.R. 7,362; France 62. |
| Silicon metal | 1,606 | 1,173 | -- | Yugoslavia 548; Italy 525; West Germany 100. |
| Unspecified[3] | 15,060 | 14,962 | -- | U.S.S.R. 11,776; Austria 827; Belgium-Luxembourg 596. |
| Steel, primary forms[3] | 479,115 | 482,874 | -- | U.S.S.R. 419,061; Bulgaria 33,319; Turkey 15,000. |
| Semimanufactures: | | | | |
| Bars, rods, angles, shapes, sections[3] | 187,499 | 190,775 | 1 | U.S.S.R. 150,319; Czechoslovakia 17,296; Poland 12,177. |
| Universals, plates, sheets[3] | 340,130 | 335,716 | -- | U.S.S.R. 235,270; Spain 17,405; Italy 15,964. |
| Hoop and strip[3] | 8,895 | 7,878 | -- | West Germany 2,992; France 1,199; Czechoslovakia 997. |
| Rails and accessories | 308 | 88 | -- | West Germany 87; Austria 1. |
| Wire[3] | 34,776 | 30,541 | (*) | Czechoslovakia 10,294; U.S.S.R. 6,067; West Germany 4,463. |
| Tubes, pipes, fittings[3] | 77,160 | 59,055 | 33 | East Germany 15,322; Czechoslovakia 13,356; Romania 9,776. |
| Castings and forgings, rough[3] | 14,063 | 12,769 | 1 | Poland 8,468; Italy 998; East Germany 773. |
| Lead: | | | | |
| Ore and concentrate | 1,800 | -- | -- | |
| Oxides | 682 | 285 | -- | West Germany 150; France 70; Italy 46. |
| Ash and residue containing lead | 25 | -- | | |
| Metal including alloys: | | | | |
| Unwrought[3] | 7,454 | 6,729 | -- | U.S.S.R. 4,986; Bulgaria 500; West Germany 239. |
| Semimanufactures | 13 | 10 | -- | West Germany 9; United Kingdom 1. |
| Magnesium: Metal including alloys: | | | | |
| Scrap | 5 | 2 | -- | All from West Germany. |
| Unwrought | 879 | 285 | -- | Italy 145; France 129. |
| Semimanufactures | 25 | 11 | -- | West Germany 7; Italy 3; France 1. |
| Manganese: | | | | |
| Ore and concentrate, metallurgical-grade[3] | 480 | 440 | -- | All from Belgium-Luxembourg. |
| Oxides | -- | 204 | -- | All from Japan. |
| Mercury: 76-pound flasks | 580 | -- | | |
| Molybdenum: | | | | |
| Ore and concentrate | 84 | 80 | -- | All from Belgium-Luxembourg. |
| Metal including alloys, all forms | 17 | 2 | -- | France 1; West Germany 1. |

See footnotes at end of table.

**Table 3.—Hungary: Apparent imports of mineral commodities[1] —Continued**

(Metric tons unless otherwise specified)

| Commodity | 1985 | 1986[p] | Sources, 1986 | |
|---|---|---|---|---|
| | | | United States | Other (principal) |
| **METALS —Continued** | | | | |
| Nickel: | | | | |
| Matte and speiss, Ni content | 202 | -- | | |
| Metal including alloys: | | | | |
| Scrap | -- | 3 | -- | All from United Kingdom. |
| Unwrought | 3 | 20 | -- | United Kingdom 18; Japan 2. |
| Semimanufactures | 114 | 81 | -- | West Germany 30; United Kingdom 27; Sweden 12. |
| Platinum-group metals: Metals including alloys, unwrought and partly wrought value, thousands | $4,171 | $5,904 | $33 | West Germany $4,884; Switzerland $892; Netherlands $72. |
| Silver: | | | | |
| Waste and sweepings ...do... | -- | $50 | $50 | |
| Metal including alloys, unwrought and partly wrought ...do... | $4,574 | $1,674 | -- | West Germany $1,518; Austria $80; Netherlands $11. |
| Tin: | | | | |
| Oxides | 2 | -- | | |
| Metal including alloys: | | | | |
| Unwrought[2] | 1,277 | 1,422 | -- | West Germany 167; Vietnam 20; unspecified 1,201. |
| Semimanufactures | 20 | 26 | (3) | Netherlands 15; West Germany 7; United Kingdom 4. |
| Titanium: | | | | |
| Ore and concentrate | 3,308 | 3,230 | -- | West Germany 2,630; Netherlands 600. |
| Oxides | 1,401 | 2,032 | -- | United Kingdom 1,248; France 467; Belgium-Luxembourg 180. |
| Metal including alloys, all forms | -- | 1 | -- | All from West Germany. |
| Tungsten: | | | | |
| Ore and concentrate | 58 | 15 | -- | All from Portugal. |
| Oxides and hydroxides | -- | 15 | -- | All from France. |
| Metal including alloys, all forms | 3 | 5 | (3) | West Germany 3; France 2. |
| Zinc: | | | | |
| Oxides | 2,195 | 1,854 | -- | France 714; Italy 282; United Kingdom 42. |
| Ash and residue containing zinc | -- | 1 | -- | All from Netherlands. |
| Metal including alloys: | | | | |
| Unwrought[2] | 20,543 | 28,167 | -- | Poland 8,253; U.S.S.R. 5,077; Bulgaria 4,371. |
| Semimanufactures | [2]5,857 | [2]5,634 | -- | Belgium-Luxembourg 667; Yugoslavia 531; unspecified 4,130. |
| Zirconium: Ore and concentrate | 4,498 | 5,181 | -- | Italy 4,778; West Germany 375; Netherlands 28. |
| Other: | | | | |
| Ores and concentrates[3] | 9,506 | 7,881 | -- | Cuba 7,014; West Germany 841; Austria 26. |
| Oxides and hydroxides | 11 | 19 | -- | Netherlands 10; United Kingdom 9. |
| Ashes and residues | 184 | 10 | -- | All from West Germany. |
| Base metals including alloys, all forms | 62 | 76 | 3 | Austria 61; Finland 8. |
| **INDUSTRIAL MINERALS** | | | | |
| Abrasives, n.e.s.: | | | | |
| Natural: Corundum, emery, pumice, etc | 63 | 70 | -- | Italy 37; Greece 22; Netherlands 6. |
| Artificial: | | | | |
| Corundum[3] | 1,434 | 1,289 | -- | West Germany 466; Italy 460; Norway 151. |
| Silicon carbide | 282 | 297 | -- | All from Italy. |
| Dust and powder of precious and semiprecious stones including diamond value, thousands | $156 | $128 | $22 | Belgium-Luxembourg $99; Netherlands $5. |
| Grinding and polishing wheels and stones[3] ...do... | $4,812 | $5,208 | $15 | U.S.S.R. $1,575; East Germany $31; Poland $12. |
| Asbestos, crude[3] | 33,596 | 31,059 | -- | U.S.S.R. 28,543; Botswana 1,231; Italy 676. |
| Barite and witherite | 16,172 | 14,590 | -- | Yugoslavia 11,200; West Germany 3,218; Ireland 102. |
| Boron materials: | | | | |
| Crude natural borates | -- | 47 | -- | All from France. |
| Oxides and acids | 10,962 | 1,940 | -- | All from U.S.S.R. |
| Bromine[3] | 649 | 655 | -- | Israel 375; East Germany 179; U.S.S.R. 101. |
| Cement[3] | 719,956 | 714,770 | -- | U.S.S.R. 466,081; Romania 135,251; East Germany 95,724. |

See footnotes at end of table.

**Table 3.—Hungary: Apparent imports of mineral commodities[1] —Continued**

(Metric tons unless otherwise specified)

| Commodity | 1985 | 1986[p] | Sources, 1986 | |
|---|---|---|---|---|
| | | | United States | Other (principal) |
| **INDUSTRIAL MINERALS —Continued** | | | | |
| Chalk | 1,719 | 1,967 | -- | Austria 1,586; France 334; Italy 24. |
| Clays, crude:[3] | | | | |
| Chamotte earth | 65,269 | 64,821 | -- | Czechoslovakia 59,817; Israel 2,194; Poland 2,096. |
| Kaolin | 59,451 | 63,278 | -- | Austria 3,231; East Germany 11,116; Czechoslovakia 9,741. |
| Unspecified | 74,558 | 66,233 | 20 | Czechoslovakia 44,568; Poland 13,546; East Germany 4,424. |
| Diamond: | | | | |
| Gem, not set or strung: value, thousands | $129 | $252 | $6 | Switzerland $127; Austria $78; Belgium-Luxembourg $41. |
| Industrial stones: do. | $1,430 | $2,014 | $1 | Belgium-Luxembourg $1,804; Austria $45; United Kingdom $60. |
| Diatomite and other infusorial earth | 2,182 | 1,155 | -- | Iceland 588; Austria 464; France 102. |
| Feldspar, fluorspar, related materials: | | | | |
| Feldspar | -- | 1,258 | -- | Yugoslavia 925; France 213; Spain 120. |
| Fluorspar | 1,196 | 689 | -- | West Germany 599; United Kingdom 66; France 24. |
| Unspecified | 1,176 | 1,587 | -- | Norway 1,234; Sweden 220; France 103. |
| Fertilizer materials: | | | | |
| Crude, n.e.s | 221 | 263 | -- | France 221; Italy 22; West Germany 20. |
| Manufactured: | | | | |
| Ammonia | 3,082 | 1,016 | -- | All from Yugoslavia. |
| Nitrogenous, $N_2$ content[2] | 309,810 | 312,909 | -- | All from U.S.S.R. |
| Phosphatic, $P_2O_5$ content[2] | 96,696 | 68,532 | -- | U.S.S.R. 26,164; Yugoslavia 16,606; Austria 14,213. |
| Potassic, $K_2O$ content[2] | 514,576 | 445,862 | -- | U.S.S.R. 315,127; East Germany 128,096; West Germany 2,640. |
| Unspecified and mixed[2] | 124,092 | 151,465 | 6,615 | Yugoslavia 74,060; Morocco 32,223; U.S.S.R. 17,047. |
| Graphite, natural | 368 | 630 | -- | Austria 330; West Germany 260; United Kingdom 29. |
| Gypsum and plaster[3] | 82,133 | 77,330 | 1 | East Germany 65,206; Romania 12,283; West Germany 305. |
| Iodine[3] | 45 | 27 | -- | U.S.S.R. 25; West Germany 2. |
| Lime[3] | 39,041 | 61,224 | -- | Czechoslovakia 47,131; Yugoslavia 13,922; West Germany 91. |
| Magnesium compounds[3] | 94,990 | 100,032 | -- | Czechoslovakia 79,028; Albania 7,802; Austria 5,290. |
| Mica: | | | | |
| Crude including splittings and waste | 190 | 181 | -- | France 108; United Kingdom 47; Austria 26. |
| Worked including agglomerated splittings | 47 | 49 | -- | West Germany 24; Switzerland 18; Austria 6. |
| Phosphates, crude[3] | 575,883 | 585,147 | -- | U.S.S.R. 453,432; Morocco 70,448; Algeria 61,272. |
| Pigments, mineral: | | | | |
| Natural, crude | -- | 2 | -- | All from West Germany. |
| Iron oxides and hydroxides, processed | 3,500 | 529 | -- | Italy 424; Belgium-Luxembourg 105. |
| Precious and semiprecious stones other than diamond: | | | | |
| Natural: value, thousands | $91 | $140 | $11 | Switzerland $124; West Germany $5. |
| Synthetic: do. | $176 | $186 | -- | Switzerland $152; West Germany $20; Japan $13. |
| Pyrite, unroasted[3] | 37,578 | 73,563 | -- | U.S.S.R. 44,844; Albania 14,500; Czechoslovakia 13,871. |
| Salt and brine[3] | 674,310 | 735,959 | -- | Romania 464,345; U.S.S.R. 163,900; Poland 69,771. |
| Sodium compounds, n.e.s.: Carbonates, manufactured[3] | 186,423 | 192,070 | -- | Bulgaria 101,723; Romania 49,137; East Germany 14,526. |
| Stone, sand and gravel: | | | | |
| Dimension stone: | | | | |
| Crude and partly worked[3] | 17,748 | 15,870 | -- | Bulgaria 8,670; Cuba 3,181; Italy 1,445. |
| Worked | 1,628 | 1,149 | -- | Italy 711; Yugoslavia 332; Austria 53. |
| Dolomite, chiefly refractory grade | 17 | 26 | -- | Austria 14; West Germany 12. |
| Gravel and crushed rock | 10,600 | 10,754 | -- | Austria 7,119; Italy 3,156; West Germany 269. |
| Limestone other than dimension | 73 | 229 | 229 | |
| Quartz and quartzite | 2,586 | 2,247 | -- | West Germany 1,878; Finland 155; Netherlands 126. |
| Sand other than metal-bearing[3] | 120,168 | 116,808 | 7 | Czechoslovakia 84,811; East Germany 23,671; Australia 5,482. |

See footnotes at end of table.

**Table 3.—Hungary: Apparent imports of mineral commodities[1] —Continued**

(Metric tons unless otherwise specified)

| Commodity | 1986 | 1987[p] | Sources, 1986 | |
|---|---|---|---|---|
| | | | United States | Other (principal) |
| INDUSTRIAL MINERALS —Continued | | | | |
| Sulfur: | | | | |
| Elemental: | | | | |
| Crude including native and byproduct[3] | 171,503 | 167,396 | -- | Poland 108,702; U.S.S.R. 28,672; West Germany 21. |
| Dioxide | 275 | 127 | -- | All from West Germany. |
| Sulfuric acid | 305 | 182 | -- | Italy 91; West Germany 51; Netherlands 40. |
| Talc, steatite, soapstone, pyrophyllite | 2,465 | 2,356 | -- | Austria 1,261; Finland 702; Italy 293. |
| Other: | | | | |
| Crude | 1,183 | 1,108 | -- | West Germany 952; Austria 156. |
| Slag and dross, not metal-bearing | -- | 43 | -- | All from Austria. |
| MINERAL FUELS AND RELATED MATERIALS | | | | |
| Asphalt and bitumen, natural | 46 | 30 | -- | All from West Germany. |
| Carbon:[3] | | | | |
| Carbon black | 948 | 748 | -- | East Germany 350; U.S.S.R. 337; Czechoslovakia 25. |
| Gas carbon | 23,754 | 30,057 | -- | U.S.S.R. 29,890; West Germany 166. |
| Coal: | | | | |
| Anthracite and bituminous[3] thousand tons | 2,518 | 2,317 | 10 | U.S.S.R. 1,240; Poland 535; Czechoslovakia 250. |
| Briquets of anthracite and bituminous coal[3] do. | 676 | 819 | -- | East Germany 735; Poland 59; West Germany 20. |
| Lignite including briquets do. | 208 | 286 | -- | Yugoslavia 276; West Germany 20. |
| Coke and semicoke[3] do. | 949 | 1,124 | -- | Yugoslavia 569; Czechoslovakia 169; U.S.S.R. 166. |
| Gas, natural: Gaseous[3] million cubic feet | 141,563 | 168,023 | -- | U.S.S.R. 165,763; Romania 2,260. |
| Peat including briquets and litter | 5 | 49 | -- | Sweden 28; West Germany 21. |
| Petroleum: | | | | |
| Crude[3] thousand 42-gallon barrels | 53,970 | 55,575 | -- | U.S.S.R. 53,678; Iran 1,897. |
| Refinery products: | | | | |
| Liquefied petroleum gas[3] do. | 250 | 255 | -- | U.S.S.R. 237; Austria 18. |
| Gasoline[3] do. | 3,265 | 3,165 | -- | U.S.S.R. 2,969; Yugoslavia 170; Albania 25. |
| Mineral jelly and wax[3] do. | 10 | 14 | (4) | U.S.S.R. 12; Poland 1. |
| Kerosene and jet fuel[3] do. | 1,214 | 1,229 | -- | U.S.S.R. 922; East Germany 101; Algeria 31. |
| Distillate fuel oil[3] do. | 5,606 | 5,639 | -- | U.S.S.R. 5,542; United Kingdom 96. |
| Lubricants[3] do. | 120 | 186 | (4) | U.S.S.R. 146; Austria 10; Netherlands 9. |
| Residual fuel oil[3] do. | 3,679 | 2,829 | -- | Austria 1,394; U.S.S.R. 1,298; United Kingdom 137. |
| Bitumen and other residues do. | 2 | (4) | -- | Mainly from Austria. |
| Bituminous mixtures do. | 1 | 4 | -- | West Germany 3; Sweden 1. |
| Petroleum coke do. | 8 | 18 | -- | Norway 16; West Germany 2. |

[p]Preliminary.

[1]Table prepared by Josef Plachy. Owing to a lack of official trade data published by Hungary, this table should not be taken as a complete presentation of this country's mineral trade. Unless otherwise specified, these data were compiled from United Nations information and data published by the trading partner countries.

[2]Official Trade Statistics of Hungary.

[3]Less than 1/2 unit.

## COMMODITY REVIEW

### METALS

**Aluminum and Bauxite.**—Hungary was the eighth largest bauxite producer in the world, with an economic reserve base of approximately 170 million tons, which would be sufficient for about 40 years at the 1987 mining rate. The $Al_2O_3$ content of Hungarian bauxite ranged from 42% to 56%; $SiO_2$ from 1% to 11%. All of the country's bauxite, alumina, and aluminum operations were managed by the Hungarian

Aluminum Trust (Hungalu). In 1986 and 1987, Hungalu's subsidiary, the Bauxite Exploration Enterprise, explored bauxite deposits in the western part of the country at Nagytarkany and Nyirad. Prospective economic deposits of higher than average quality bauxite were found in five locations and were expected to add about 1 million tons of bauxite to the country's reserves. Exploration in this region was to have been completed by mid-1987. Earlier investigations indicated other deposits in the Transdanubian mountain range. In 1986, other bauxite deposits were reportedly situated on the periphery of the Nagyegyhaza coalfields. In 1987, Hungalu's exports were valued at $190 million, and planned exports for 1988 were expected to reach $240 million. A substantial share of exported aluminum was sold to the Federal Republic of Germany, Japan, and the United States.

Hungalu's total labor force was about 20,000, of which 5,000 were involved with bauxite mining. The company processed nearly 85% of its annual bauxite production into alumina, and in accordance with the Soviet-Hungarian alumina agreement for 1986-90, annually sent 530,000 tons of alumina to the Soviet Union for smelting into aluminum. In return, Hungary received 205,000 tons of aluminum ingot. Also, as partial payment, Hungary supplied the U.S.S.R. with 5,000 tons of aluminum semimanufactures per year. This arrangement with the Soviet Union was necessitated by Hungary's relative shortage and the Soviet Union's abundance of electric power. To remain competitive, Hungalu maintained a policy of streamlining its production structure. Recent investments included the completion in 1987 of a new alumina refractory unit for industrial boilers at the Masonmagyarovar alumina plant.

Copper.—Although Hungary stopped mining copper in the late 1970's, the country's copper deposit at Recsk was estimated to be among the 20 largest deposits in the world. The Recsk ore body lay 400 meters to 1,200 meters below the surface. The sulfide ore was also found to contain valuable components of gold, lead, molybdenum, silver, and zinc. Mine development had been constrained by limited financial resources and low copper prices. In 1987, Hungary reportedly conducted negotiations with the Soviet Union concerning possible Soviet participation in processing some of the Recsk ore when the mine becomes operational in the late 1990's.

Gallium.—Hungary remained a substantial world producer of gallium as a byproduct of alumina processing at the Ajka alumina plant. A new 3-ton-per-year unit was reportedly under construction at Ajka in 1987 and was scheduled for completion by mid-1988. The new unit would double Hungary's annual production of gallium to 6 tons. Most of the country's gallium output was exported to high-technology electronics industries.

Manganese.—The National Ore and Mineral Mines Enterprise mined both oxidised and carbonated manganese ore at the Urkut Mine in Bakony. Most of the ore produced in 1987 was oxidic and contained between 30% and 40% manganese. Most of the manganese concentrate was exported, although a small amount of ferromanganese was produced domestically.

Steel.—Hungary had to rely entirely on imports to meet its domestic requirements for iron ore. Although most of the country's needs were met by imports from the Soviet Union, Hungary began to look in 1986 for the availability of higher grade ore in Australia, Brazil, Canada, India, and Sweden. At yearend 1987, the Hungarian Government and Hancock Mining Ltd. of Western Australia signed a memorandum of understanding to supply Hungary with 500,000 tons of ore per year for up to 15 years. The agreement would be reviewed every 2 years to determine additional need, and it provided for possible added annual shipments of up to 1.5 million tons of ore.

Hungary continued to modernize its steel industry in 1987. Plans were drawn to replace open-hearth systems with oxygen converters. Other plans were to increase continuous casting capacity, alloy steel production and sales, and to improve the quality of rolled products. During the year, the Danube Iron and Steel Works at Dunaujvaros began to modernize its hot-rolling mill and planned to upgrade the cold-rolling unit in 1988. In 1987, the Danube Works increased production of higher value products and planned the construction of a new foundry. The Ozd Iron and Steel Works reportedly reduced operational losses during the year, closed down an open-hearth furnace together with a number of other units, and plan-

ned to concentrate production mainly on rolled steel products. As part of Ozd's structural reorganization, management was to be reduced by 200 employees in 1987 and 1988. The Lenin Iron and Steel Works at Diosgyor reduced its labor force by 1,000 employees in 1987, and planned even greater work force reductions in 1988.

## INDUSTRIAL MINERALS

Hungary produced a wide variety of industrial minerals. Bentonite, gypsum, kaolin, perlite, and zeolite were produced in sufficient amounts to meet domestic and some export needs. Hungary's industrial mineral production was managed by the National Ore and Mineral Mines Enterprise. In aggregate, annual output of industrial minerals has been about 4 million tons.

## MINERAL FUELS

Coal.—In 1987, the Tatabanya Coal Mining Enterprise suspended operations at the Many coal mine. Underground water was reportedly 10 times greater than originally calculated. The company planned to sell off the mine's machinery and equipment. A new opencast lignite mine was put onstream at Vadna in Borsod County. The mine was expected to produce through mid-1988 at a rate of 1,000 tons per day. The development of a new coalfield was reported at Visonta in the northern part of the country. Reserves were determined at about 90 million tons, and operational startup was scheduled for early 1990. Earth moving and drainage work was begun in 1987 to prepare the site for mine development.

Natural Gas and Petroleum.—Planned production targets for natural gas and petroleum were exceeded in 1987. Most of Hungary's need for petroleum and natural gas were met by imports from the U.S.S.R.

Nuclear Power.—At yearend, a fourth Soviet 440-megawatt reactor block was put into operation at the Paks nuclear powerplant. With the new capacity, the plant would generate almost one-half of Hungary's electricity. Hungary continued to mine uranium at Mecsek. The ore was processed in the Soviet Union and used to fuel the Paks reactors.

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